ABSTRACT

Disclosed is a synthetic silica glass for use with light having a wavelength of 150 to 200 nm, which has an OH group at a concentration of less than 1 ppm, an oxygen-excess type defect at a concentration of 1×10^{16} defects/cm^3 or less, a hydrogen molecule at a concentration of less than 1×10^{17} molecules/cm^3, and a non-bridging oxygen radical at a concentration of 1×10^{16} radicals/cm^3 or less in the state after the synthetic silica glass is irradiated with light of a xenon excimer lamp having an energy density of 10 mW/cm^2 and 3 kJ/cm^2 or with light of an F_2 laser by 10^7 pulses at an energy density of 10 mJ/cm^2/pulse. The synthetic silica glass can exhibit excellent resistance to ultraviolet light with a wavelength of 150 to 190 nm when incorporated in a device using ultraviolet light with a wavelength of 150 to 190 nm as a light source.